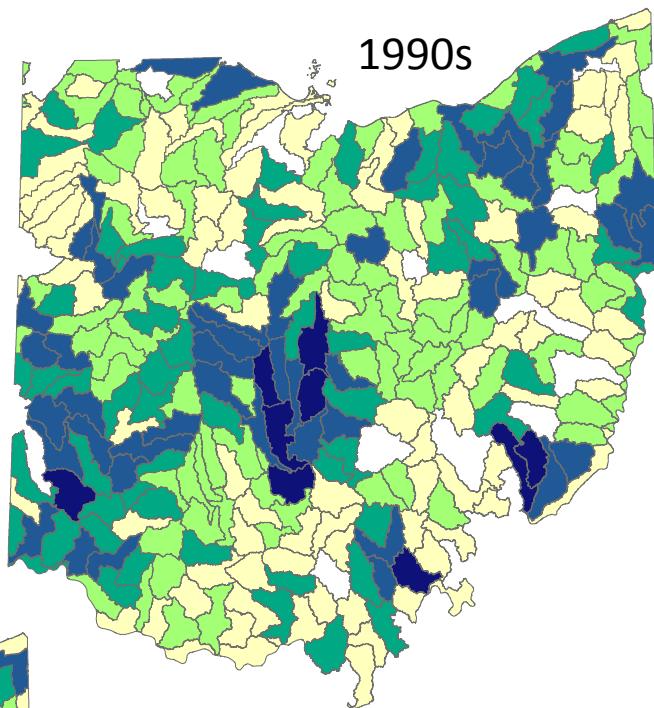
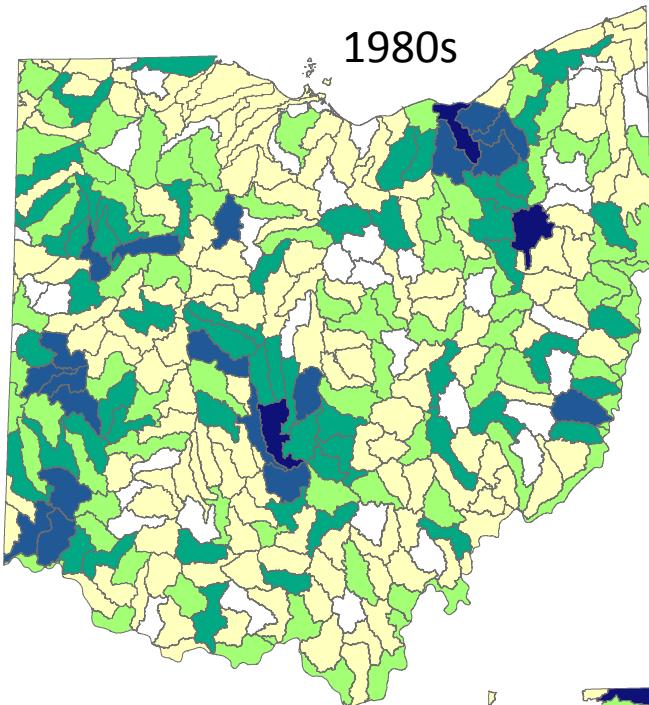


Number of Sites by HUC10 and Decade; Headwaters

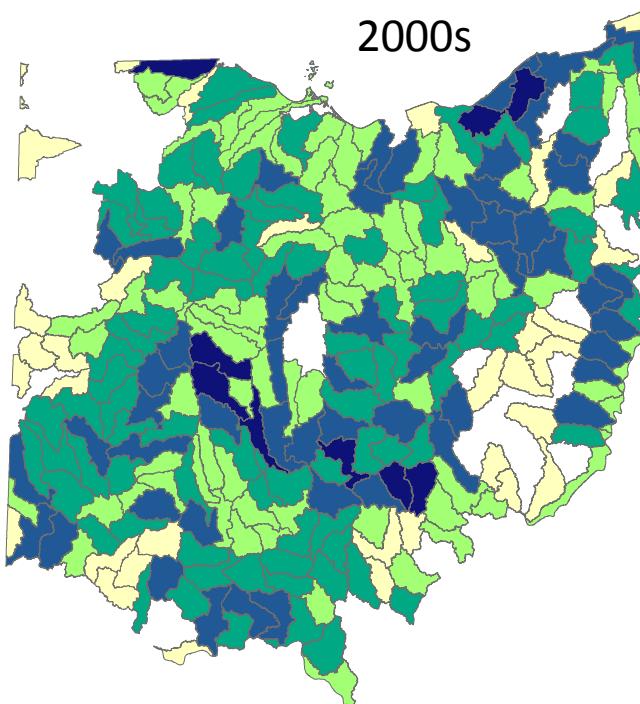


Legend

10-Digit Watersheds (NRCS)

Sample Sizes

0
1 - 5
6 - 11
12 - 21
22 - 39
40 - 200

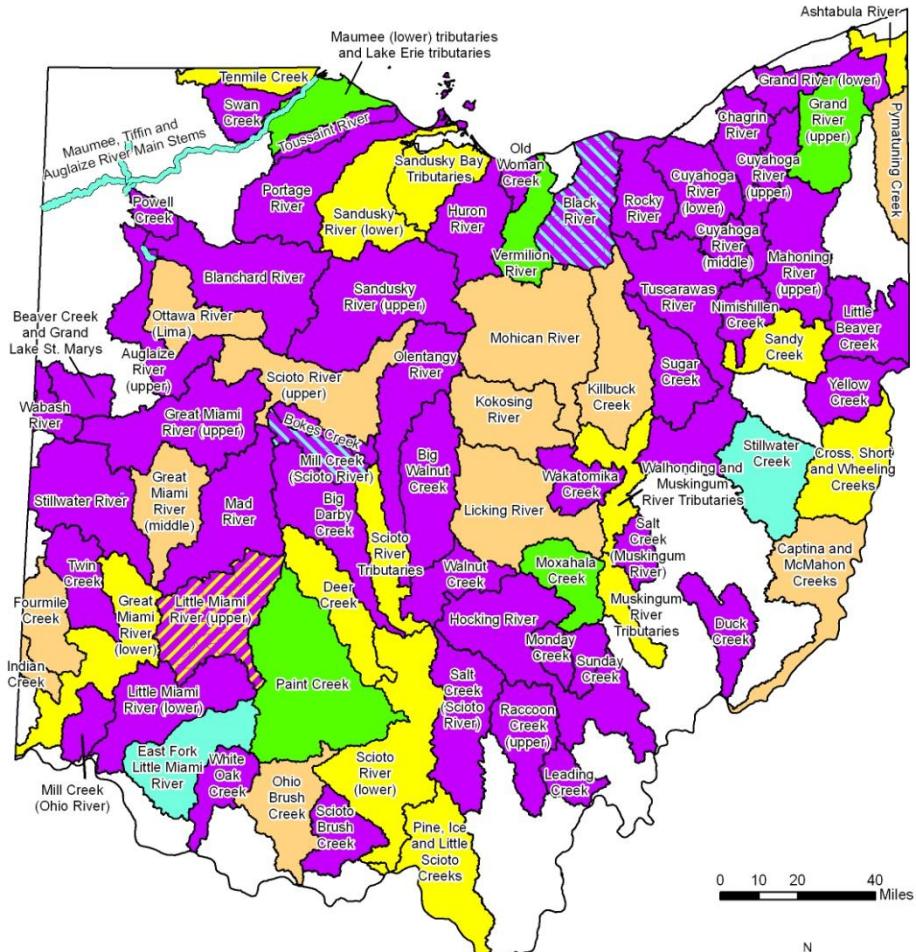


Sample Sizes* for Matched
Biology and Chemistry
Headwaters

Decade	1980s	1990s	2000s
HELP	40	60	120
ECBP	140	200	400

*a rough approximation

Ohio Total Maximum Daily Load Program Progress



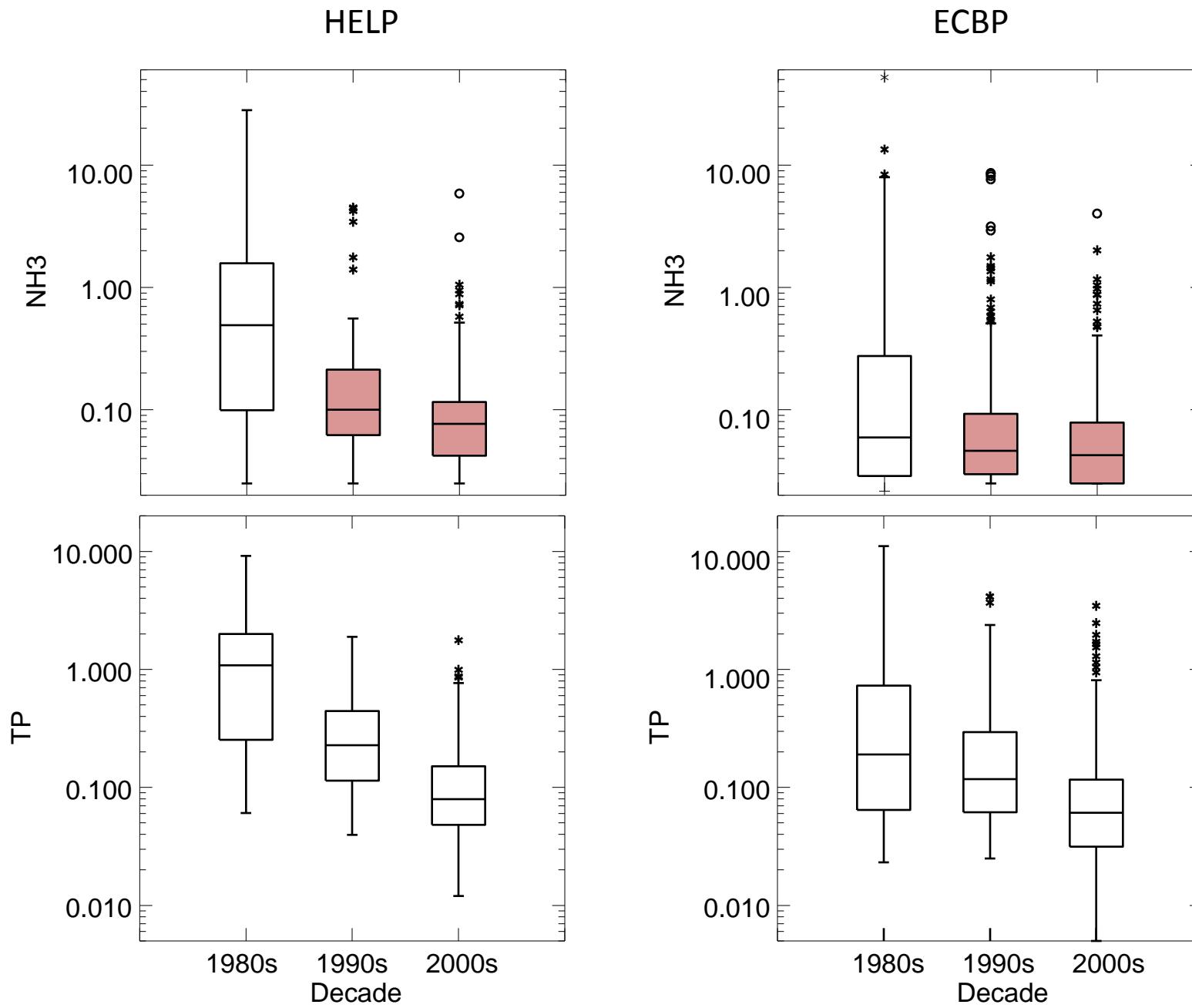
0 10 20 40 Miles



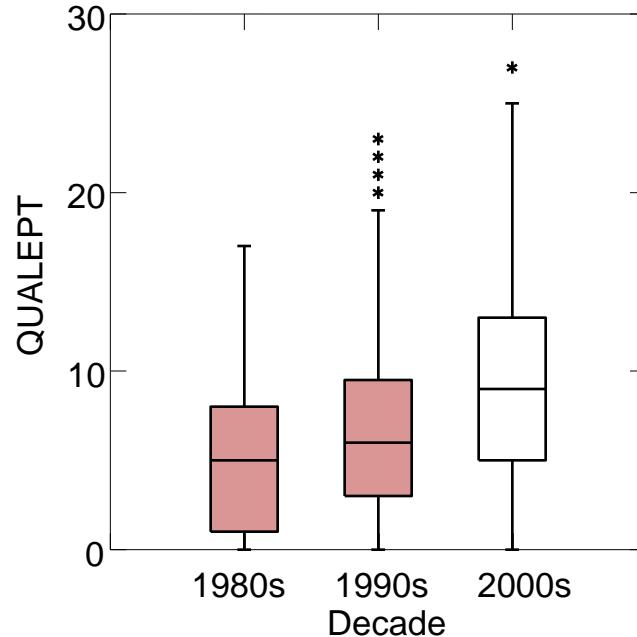
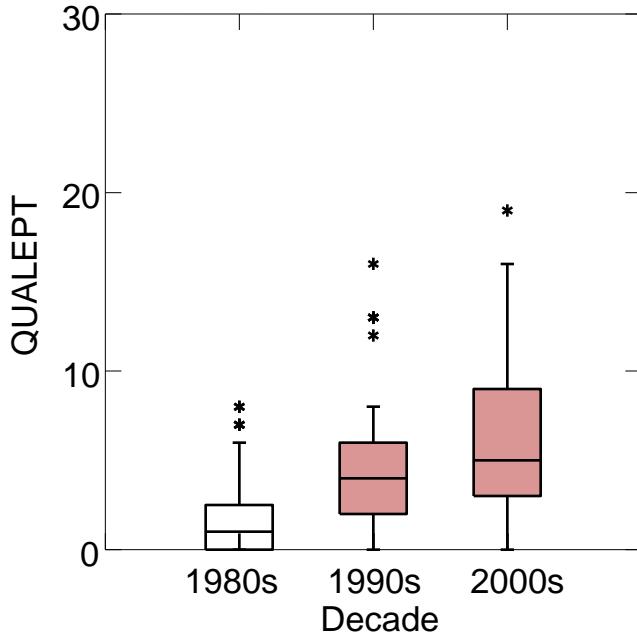
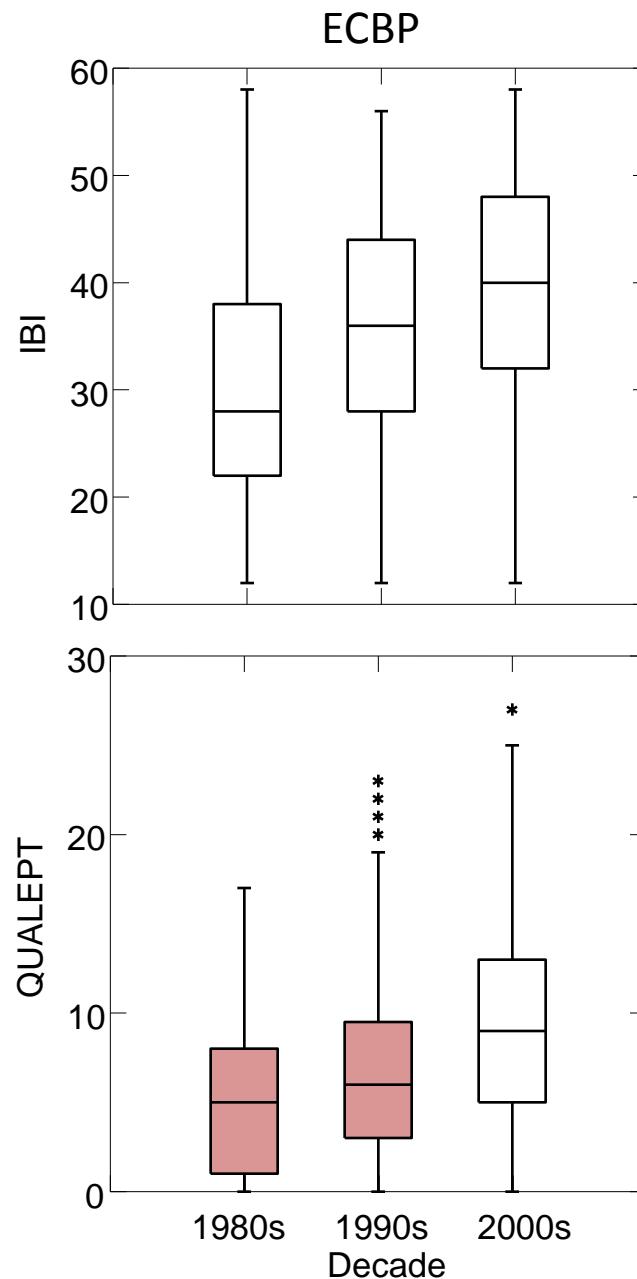
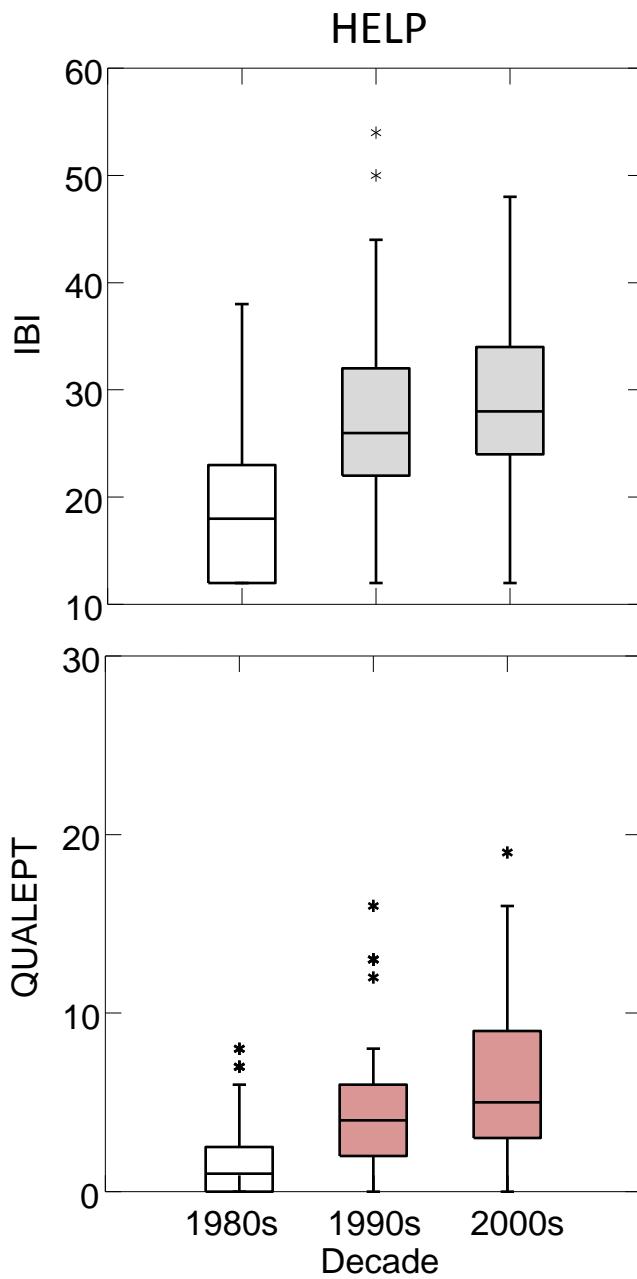
- Approved by U.S. EPA; Federal TMDLs completed
- First cycle TMDL approved by U.S. EPA; monitoring planned for 2012
- First cycle TMDL approved by U.S. EPA; second cycle TMDL underway
- TMDL nearly complete
- Load analysis in progress
- Watershed assessment in progress
- Monitoring planned for 2012

Updated 5/7/2012

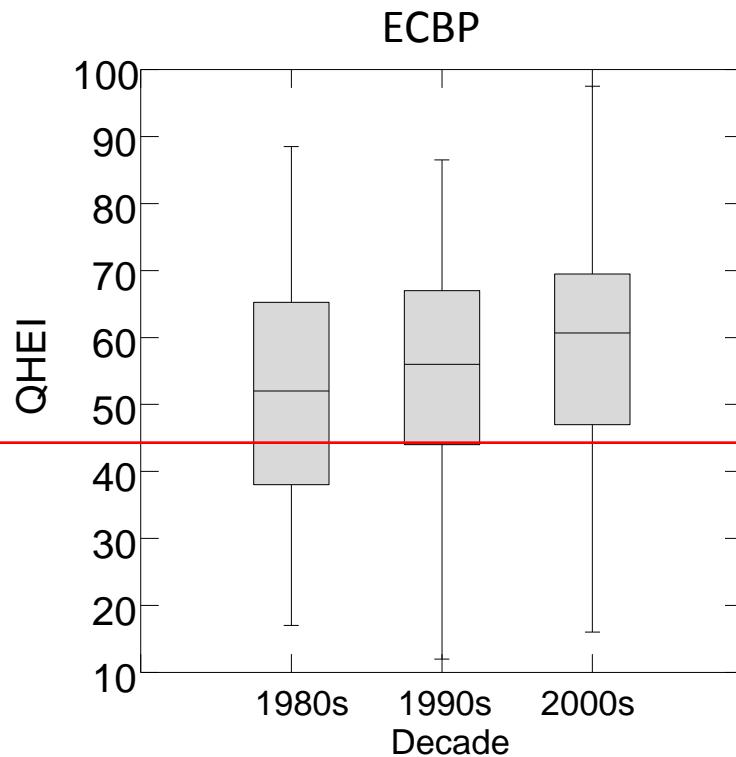
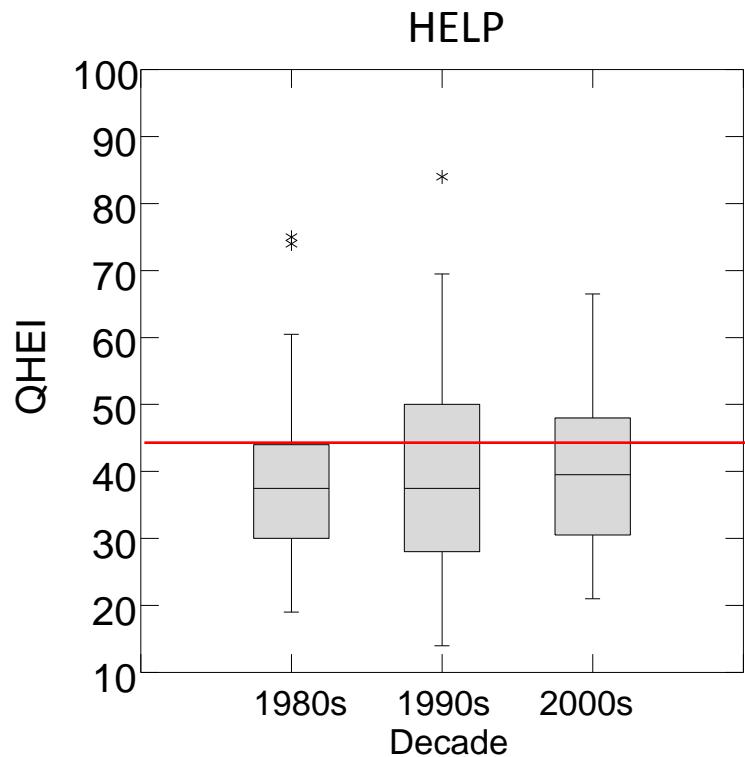
Ammonia and Phosphorus Concentrations by Decade in Headwaters



Fish IBI and EPT Richness by Decade in Headwaters

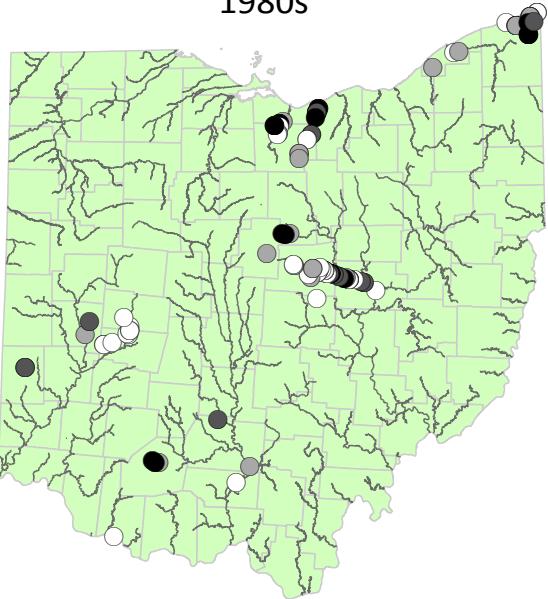


QHEI Scores by Decade in Headwaters

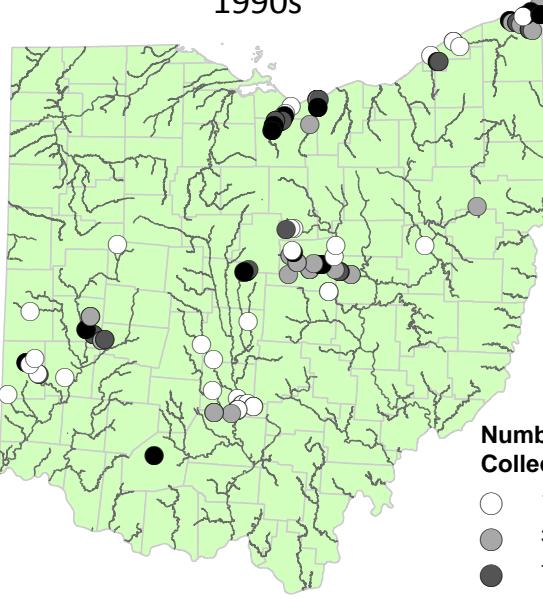


Bigeye Chub

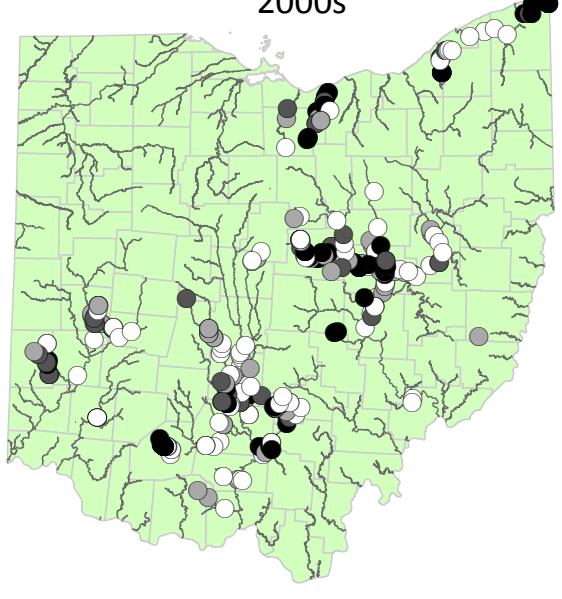
1980s



1990s



2000s

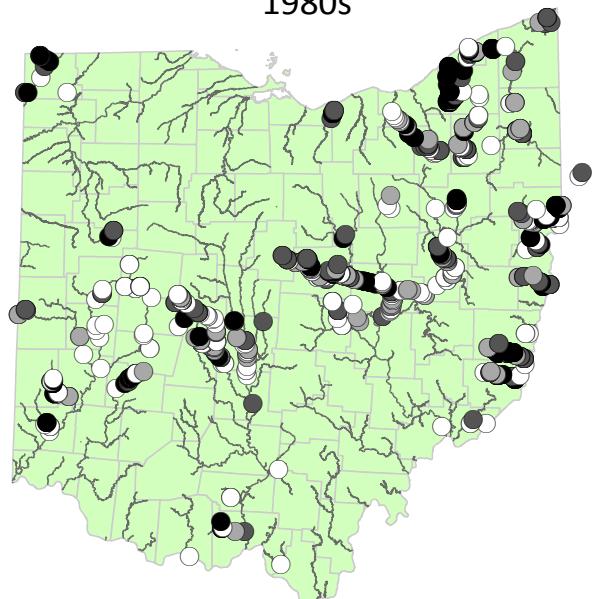


Number Collected

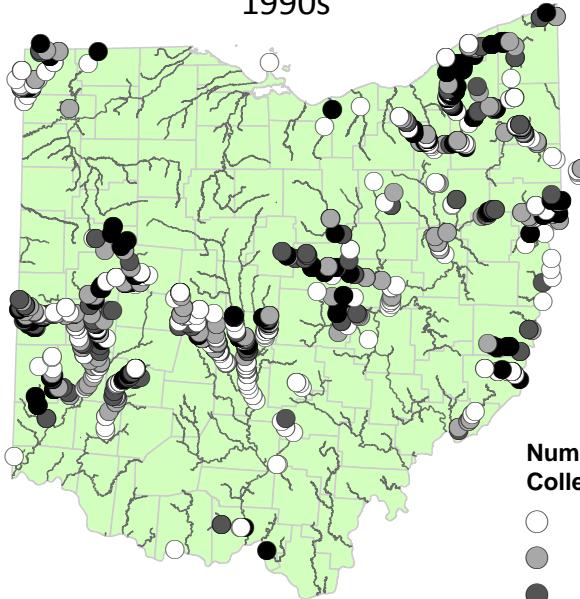
- 1 - 2
- 3 - 6
- 7 - 14
- 15 - 176

Nocomis Chubs

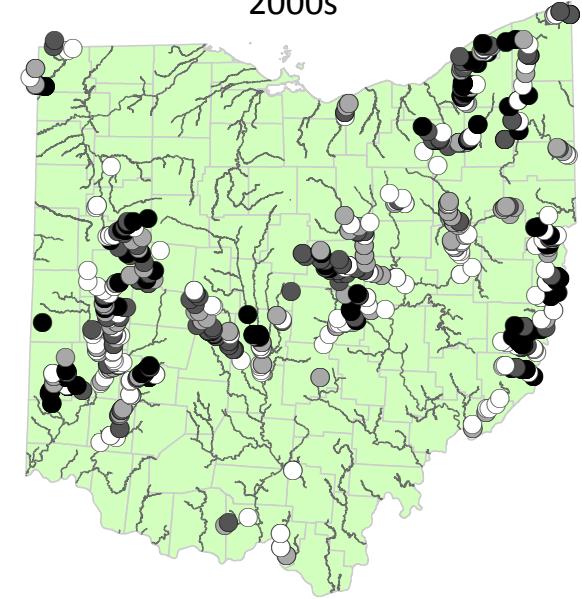
1980s



1990s



2000s



Number Collected

- 1 - 2
- 3 - 7
- 8 - 22
- 23 - 715

Rough Comparison of Monitoring Programs

Ohio	Indiana	Michigan
Intensive basin surveys	Random state-wide (5yr) with follow-up	Random + fixed station
Fish Macroinvertebrates - LLT Chemistry ~6 samples Habitat (QHEI)	Fish Macroinvertebrates - FLT but recently started LLT Chemistry ~ 1-3 samples Habitat (QHEI)	Macroinvertebrates - FLT Chemistry 3 - many Habitat (RBP?)